REMARKS

Claims 16, 24, and 34 stand objected to.

Claim 16 stands rejected under 35 USC 112 for lack of antecedent basis.

Claims 16 and 24 stand rejected under 35 USC 103 as being unpatentable over McCarty (6015285) in view of Kavonius (6488016). Claims 17-23, 25-29, and 31-33 stand rejected under 35 USC 103 as being unpatentable over McCarty (6015285) in view of Kavonius (6488016) in view of Pfefferle (6048194). Claims 34 and 35 stand under 35 USC 103 as being unpatentable over Monty (6279323 in view of McCarty (6015285).

Claim Objections

Applicant appreciates Examiner's effort to clarify that which is claimed. Applicant has amended claims 16, 24, and 34 in an effort to eliminate any informality objections. Applicant has eliminated any tangential requirement and further defined the structural relationships. These modifications are supported by the figures, and paragraphs 37-39. Applicant respectfully requests the objection be withdrawn.

35 USC 112 Rejection

Applicant has amended claim 16 to fortify the antecedent basis as noted by Examiner. Applicant respectfully request the 35 USC 112 rejection be withdrawn.

35 USC 103 Rejection

Applicant asserts that the proposed McCarty/Kavonius combination does not teach or suggest Applicant's revised claim language. Applicant understands that Examiner proposes to put the Kavonius structure inside the unlabeled, cylindrical flow channel of McCarty. Examiner notes that the swirl rod would then be assumed to be in contact with the flow channel wall. Applicant asserts that in this configuration the flow channel would not be annular as claimed, but would be helical as defined by helix 12 of Kavonius. Thus, this combination would not teach or suggest the claimed language. Applicant further asserts that it is the helix 12 that imparts swirl, not the outer wall of McCarty as the claims require.

Claim 16 now claims "directing the pre-reacted fuel from the first flow path *onto an inner surface* of an outer wall that defines an outer perimeter of the annular flow channel such

that inner surface of the annular flow channel outer wall is effective to impart a circumferential motion to the pre-reacted fuel in the annular flow channel." In McCarty the flow is not directed onto the inner surface of the outer wall, and the inner surface is not effective to impart any circumferential movement. In the combination the flow would be directed onto the Kavonius helix 12, but that helix 12 does not define an outer perimeter of the annular flow channel. Consequently this limitation is not taught or suggested. Claim 24 has been amended to include similar language, and given the amended structural language, claim 24 has also been amended to eliminate the annular requirement for the flow channel, as it is believed that the limitation is not necessary to distinguish over the prior art. The inner surface arguments that distinguish claim 16 from the McCarty/Kavonius combination also distinguish claim 24 from the combination. Applicant respectfully requests the 35 USC 103 rejections of claims 16 and 24 be withdrawn.

The McCarty/Kavonius/Pfefferle rejection of claim 17-23, 25-29, and 31-33 depends on the underlying McCarty/Kavonius rejections of claims 16 and 24. Claims 16 and 24 have been shown to survive application of McCarty/Kavonius, and Pfefferle does not teach or suggest that which is not taught or suggested by McCarty/Kavonius. Claims 16 and 24 thus survive application of McCarty/Kavonius/Pfefferle, and accordingly, claims 17-23, 25-29, and 31-33 necessarily survive as well. Applicant respectfully requests the 35 USC 103 rejections of claim 17-23, 25-29, and 31-33 be withdrawn.

Regarding the combination of Monty/McCarty, Applicant first asserts that Monty cannot be modified by McCarty as proposed without changing the principle of operation of Monty, which is impermissible per MPEP 2143.01(VI). Specifically, Monty teaches a burner having a single fuel source 32 that directs a flow of fuel into the burner at an upstream end of the burner in a direction of flow that is either essentially parallel to a longitudinal axis of the burner, or directed radially outward from the center of the burner. There is no provision for Monty to receive a flow of fuel radially inward, yet a radial flow of fuel is required for McCarty to operate. Thus, modifying Monty, which teaches a flow of fuel from an upstream end of the burner, with McCarty, which requires a radially inward flow of fuel in order for the catalytic pre-reaction to occur results in either: a non-tenable device having catalytic elements that are not in a fuel flow path; or requires further modifications to Monty to produce radial fuel flow, and the further

modification change the principle of operation of Monty from an axial fuel flow burner to a radial fuel flow burner.

Applicant also asserts that, notwithstanding the above, Monty/McCarty does not teach amended claim 34 or claim 35. Applicant first notes that Monty does not appear to teach any annular flow channel comprising a first annular outlet arranged to direct a flow of a first fuel onto an inner surface of an annular outer wall. In Monty fuel 32 appears to be directed only into an unlabeled *cylindrical* inner passageway. Swirl in the unlabeled cylindrical inner passageway appears to be generated by dual inclined holes 34b. (Column 3, lines 39-45). Thus, while fuel is discharged into this passageway, the passageway is not annular, and circumferential motion is imparted by holes, not an inner surface of an outer wall that defines the annular passageway.

Surrounding the unlabeled cylindrical inner passageway is an unlabeled annular passageway that comprises vanes 34d (figure 2). The unlabeled annular passageway appears to be the sole annular passageway, and it does not have an outlet arranged to direct a flow of fuel. Further, in the sole annular passageway, the swirl is imparted by vanes 34d, not by an inner surface of an outer wall that defines an outer perimeter of the annular flow channel. Consequently, Monty/McCarty does not appear to teach or suggest Applicant's amended claim language. Applicant respectfully requests the 35 USC 103 rejection of claim 34 and dependent claim 35 be withdrawn.

(Continued on the next page)

Conclusion

Applicants respectfully request that the Examiner reconsider the objections and rejections and timely pass the application to allowance. All correspondence should continue to be directed to our below-listed address. Please grant any extensions of time required to enter this paper. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

Dated: 06/24/2011

By: Tina Gonka

Tina Gonka
Limited Recognition No. L0623
(407) 736-4005

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, New Jersey 08830